

## **AMENDMENTS TO THE SPECIFICATION:**

Please amend the specification as follows:

On page 16 of the specification, please add the following paragraph at line 25:

Most, but by no means all, eukaryotes produce proteins of greater than 100 kd in response to high temperatures. They have been characterized in detail only in mammalian cells. The 110 kd protein of murine cells is found in the nucleus, with concentration in the nucleolus of both control and heat-shocked cells (Subjeck *et al.*, 1983, *J. Cell Biol.* 97:1389-1395). The protein separates from the phase-dense nucleolar body, forming a nucleolar cap, when cultures growing at normal temperatures become confluent or when actively growing cells are incubated without serum or are treated with actinomycin (Shyy *et al.*, 1986, *Cancer Res.* 46:4738-4745). Brief heat shocks do not lead to nucleolar segmentation in proliferating cells; in confluent cultures they reverse it. With longer heat shocks, hsp110 forms a ring-like structure at the nucleolar periphery (Welch *et al.*, 1986, *J. Cell Biol.* 103:2035-2052). Immunoelectron microscopy indicates that hsp110 associates with the fibrillar component of nucleoli, the site of nucleolar chromatin (rDNA). Treatment of fixed cells with RNase eliminates staining (Subjeck *et al.*, 1983, *J. Cell Biol.* 97:1389-1395), suggesting that the protein associates with RNA or with a complex of proteins that bind RNA. Since ribosome production is very sensitive to heat shock (Nover *et al.*, 1986, *Eur. J. Biochem.* 160:297-304), it is speculated that hsp110 is induced to protect it. In this respect it is notable that a member of the mammalian hsp70 gene family also localizes to nucleoli and has been postulated to protect ribosome assembly (Lewis *et al.*, 1985, *EMBO J.* 4:3137-3143; Pelham, 1986, *Cell* 46:959-961; Welch *et al.*, 1984, *J. Biol. Chem.* 259:4501-4513). Unlike hsp110, this protein concentrates in the granular region of the nucleolus, the location of pre-ribosomes (Welch and Suhan, 1985, *J. Cell Biol.* 101:1198-1211).